UV curing the reactive mesogen.

17. (Amended) The method of claim 16, wherein said previously formed alignment layer is polyimide-free.

18. (Amended). The method of claim 16, wherein said liquid crystal layer comprises a high pretilt layer, said high pretilt layer coated on the previously formed alignment layer, the high pretilt layer comprising an epoxy and reactive liquid crystal composition cast and aligned on the previously formed alignment layer.

Please cancel claims 34-48.

REMARKS

This is in response to the Office Action of August 29, 2002, the shortened period for response there to being one month, which expires September 29, 2002.

A restriction requirement was set forth between:

Group I, claims 1-6, to an article,

Group II, claims 7-15, to a method,

Group III, claims 16-18, to a method,

Group IV, claims 19-33, to a method,

Group V, claims 34-39 and 49-52, to an article,

Group VI, claims 40-46, to a method, and

Group VII, claims 47-48, to a method.

Applicant elects Group I with traverse. Applicant has amended claim 1, 7, 16, 17 and 18 to clarify the invention and to bring all said claims into one examinable group. It is respectfully submitted that, as a result of the amendment of said claims, Group I is no longer distinct from the claims of Group II, Group III or Group IV. Therefore, it is respectfully submitted that claims 1-33 should all be examined. Claims 34-48 are withdrawn from examination; applicant reserves the right to pursue said withdrawn claims in a subsequent divisional application.

The examiner has acknowledged that the invention of Group II is related to the invention of Group I as Group II is directed to a process for making the product of Group I. However, the examiner states that the product can be made by a different process that does not require alignment of the molecules in the layer. This alleged distinction has been eliminated by the amendment of claim 1 which now clarifies that the liquid crystal molecules of the mesogen are aligned. Claim 7 has been amended to specify that the mesogen comprises liquid crystal molecules to provide proper antecedent basis for "the molecules" set forth in paragraph e) thereof.

The examiner has stated that the inventions of Group II and III are unrelated in that Group II is directed to a method of aligning a liquid crystal layer while Group III is directed to a method for preparing an alignment layer for a liquid crystal device. It is pointed out that claim 7 was, and still is, directed to a "liquid crystal device" and the fabrication of an alignment layer in that liquid crystal device. Claim 16 (Group III) has been amended so that it is directed to a method of forming a liquid crystal device comprising forming an aligned liquid crystal layer, that aligned liquid crystal layer being formed on a substrate, namely a previously formed alignment layer. The previously formed alignment layer also comprising an aligned liquid crystal layer. In other words claim 16 is directed to a liquid crystal device which has two aligned liquid crystal layers, each of said aligned liquid crystal layers being formed in the same manner. In regard to Group III, claims 16 -18, the examiners attention is directed to page 11, line 1 - page 16, line 31.

Accordingly, Group I, Claims 1-6, are directed to an alignment layer in a liquid crystal device, the liquid crystals being aligned, Group II, claims 7-15 is directed to a method of forming an alignment layer on a substrate in a liquid crystal device, Group III is directed to a method of forming an alignment layer on a substrate in a liquid crystal device, the substrate also being an alignment layer. In the same manner, Group IV, claims 19-33, is directed to a method of fabricating a liquid crystal device (a LCD compensator) comprising forming a compensator (an alignment layer) on a substrate, the substrate also being an alignment layer. In each instance, the claimed alignment layer comprises or is fabricated in the same manner. The products produced are not materially different, and the claimed component in each instance operates and functions in the same manner and has the same effect. It is therefore submitted that Groups I-IV should be examined as one group, the claims not being directed to distinctly different inventions. In the alternative, examination should be to groups I - III, or, as a minimum, examination should be as to Groups I and II.

Respectfully submitted,

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By: _____

Michael J. Ram
Registration No. 26,379
Attorney for Applicant(s)

KOPPEL, JACOBS, PATRICK & HEYBL
555 St Charles Drive, Suite 107
Thousand Oaks, CA 91360
Phone (805) 373-0060
Fax (805) 373-0051
CN/PATENT/RESPOA00SC080US6

Claims Marked Up Version
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1. (Amended) An alignment layer for a liquid crystal device, comprising:

an epoxy; and

a reactive mesogen mixed with said epoxy, the reactive mesogen comprising aligned liquid crystal molecules.

7. (Amended) A method for fabricating an alignment layer for a liquid crystal device, comprising:

a) dissolving an epoxy and a reactive mesogen (RM), the reactive mesogen comprising liquid crystal molecules, a solvent in to form an isotropic mixture;

b) forming a layer of said mixture on a substrate;

c) removing solvent from the layer;

d) polymerizing the layer; and

e) aligning the molecules in the layer.

16. (Amended) In a liquid crystal device a [A] method for forming an aligned [aligning a] liquid crystal layer comprising:

casting a liquid crystal composition on [an] a previously formed alignment layer, said previously formed alignment layer comprising:

a UV curable epoxy; and

a reactive mesogen , molecules in said mesogen being aligned; and

UV curing the [layer] reactive mesogen.

17. (Amended) The method of claim 16, wherein said previously formed alignment layer is polyimide-free.

18. (Amended) The method of claim 16, wherein said[alignment] liquid crystal layer comprises a high pretilt layer, said high pretilt layer [being] coated on [a] the previously formed alignment layer, the high pretilt layer comprising [the] an epoxy and reactive [mesogen, said] liquid crystal composition [being] cast and aligned on the [high pretilt layer] previously formed alignment layer.